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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/755,715	01/12/2004	Jukka Vesterinen	915-007.073	9752

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EXAMINER

CAO, HUEDUNG X

ART UNIT	PAPER NUMBER
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2821

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No. 10/755,715	Applicant(s) VESTERINEN, JUKKA	
	Examiner Huedung X. Cao	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 7-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-21 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) 22-26 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-3, and 7-21, drawn to an antenna device which includes at least one second PWB being attached to said second side of said antenna carrier, wherein said at least one second PWB acts as a parasitic antenna element .

II. Claims 22-26, drawn to an antenna device which includes at least one second PWB being attached to said second side of said antenna carrier, wherein said second at least one second PWB is connected to a ground plane associated with first radiation structure.

2. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claim is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

3. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement is traversed (37 CFR 1.143).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, and 7-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's admitted Prior Art (Specification, pages 1-4, and figure 1) in view of RAWNICK et al. (US 2003/0211437 A1).

As per claim 1, Prior Art teaches "a device" (Prior Art, figure 1), comprising:
an at least partially plane antenna carrier with a first side and a second side, at least one first Printed Wiring Board (PWB) being attached to said first side of said antenna carrier and having a first radiation structure formed on it (Prior Art, figure 1, PWB 2, and pages 3, lines 4-27), and at least one second PWB being attached to said second side of said antenna carrier wherein said at least one second PWB acts as a parasitic antenna element which Prior Art does not explicitly disclose. However, Rawnick teaches that second PWB being attached to said second side of said antenna carrier, wherein said at least one second PWB acts as a parasitic antenna element is widely used in the art (Rawnick, figure 1, parasitic element 20). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a second printed circuit board to Prior Art's antenna system, as taught by Rawnick doing so it would improve the gain of impedance matching of the antenna.

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Claim 2 adds into claim 1, wherein said first and/or second PWBS are one layer PWBS that comprise at least one metallic layer and/or at least one dielectric layer (specification, pages 3, lines 11-27).

Claim 3 adds into claim 1, wherein said first and/or second PWBS further comprise at least one adhesive layer, and wherein said first and/or second PWBS are attached to said antenna carrier via said adhesive layer (specification, page 3, lines 4-9).

Claim 7 adds into claim 1, further comprising a protection layer that at least partially covers said first PWB (specification, page 4, lines 15-18).

Claim 8 adds into claim 1, further comprising at least one pogo pin that penetrates said antenna carrier to electrically contact said radiation structure of said first PWB (specification, page 3, line 29-page 4, line 13).

Claim 9 adds into claim 1, wherein said first PWB is positioned on said first side of said antenna carrier and said second PWB is positioned on the second side of the antenna carrier so that the first and second PWB at least partially overlap (Rawnick, figure 1)

Claim 10 adds into claim 1, wherein said first radiation structure is essentially line-shaped (Prior art, figure 1, radiations 2-1 and 2-2; specification, page 3, lines 24-27).

Claim 11 adds into claim 10, wherein said first radiation structure is at least partially bent (Prior art, figure 1, radiations 2-1 and 2-2; specification, page 3, lines 24-27).

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Claim 12 adds in to claim 1, wherein said second PWB is essentially plane (Rawnick, figure 1, element 20).

Claim 13 adds into claim 1, wherein said antenna carrier consists of a dielectric material (specification, page 3, lines 4-9).

As per claim 14, Prior Art teaches "a device" (Prior Art, figure 1), comprising:
an at least partially plane antenna carrier with a first side and a second side, at least one first Printed Wiring Board (PWB) being attached to said first side of said antenna carrier and having a first radiation structure formed on it (Prior Art, figure 1, PWB 2, and pages 3, lines 4-27), wherein the first radiation structure is tuned to a first frequency range and wherein the second radiation structure is tuned to at least one second frequency range (specification, page 3, lines 11-27); and at least one second PWB being attached to said second side of said antenna carrier which Prior Art does not explicitly disclose. However, Rawnick teaches that second PWB being attached to said second side of said antenna carrier, Rawnick, figure 1, parasitic element 20). It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a second printed circuit board to Prior Art's antenna system, as taught by Rawnick doing so it would improve the gain of impedance matching of the antenna

Claim 15 adds into claim 1, wherein said device is a hand-held device, in particular a GPS-capable or Galileo-capable mobile phone (specification, page 2, lines 1-7).

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Claim 16 adds into claim 14, wherein said first frequency range is a frequency range of a satellite navigation system and wherein said at least one second frequency range is a frequency range of mobile radio system (specification, page 3, lines 11-27).

Claim 17 is similar in scope to claim 1; therefore; it is rejected for the same reason.

Claim 18 claims a method based on the antenna system of claim 1; therefore; it is rejected for the same reason.

Claim 19 claims the computer program based on the antenna system of claim 1; therefore, it is rejected for the same reason.

Claim 20 claims a radio system is similar in scope to claim 1 except for at least one base station which Prior art does not explicitly disclose. However, it would have been obvious to one of ordinary skill in the art to include the base station to have a complete radio system.

Claim 21 adds into claim 20, wherein said mobile station is capable of receiving signals transmitted by at least one satellite and of at least partially determining its position from said received signals (specification, page 1, lines 12-17).

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Inquiries

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huedung Cao whose telephone number is (571) 272-1939.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Huedung Cao
Patent Examiner

A handwritten signature in black ink, consisting of a series of loops and a long horizontal stroke at the end, representing the name Huedung Cao.